

Fig. 1

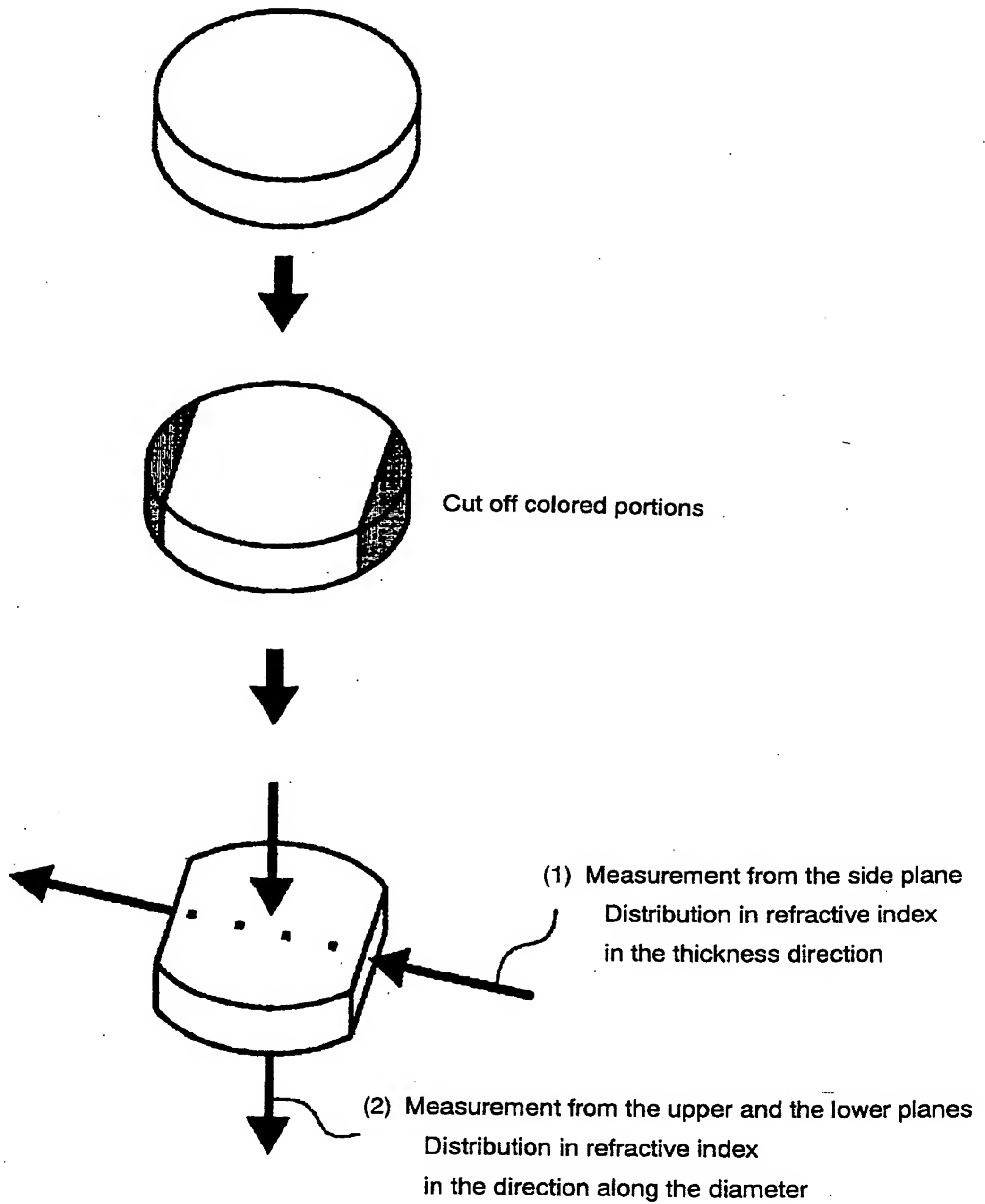


Fig. 2

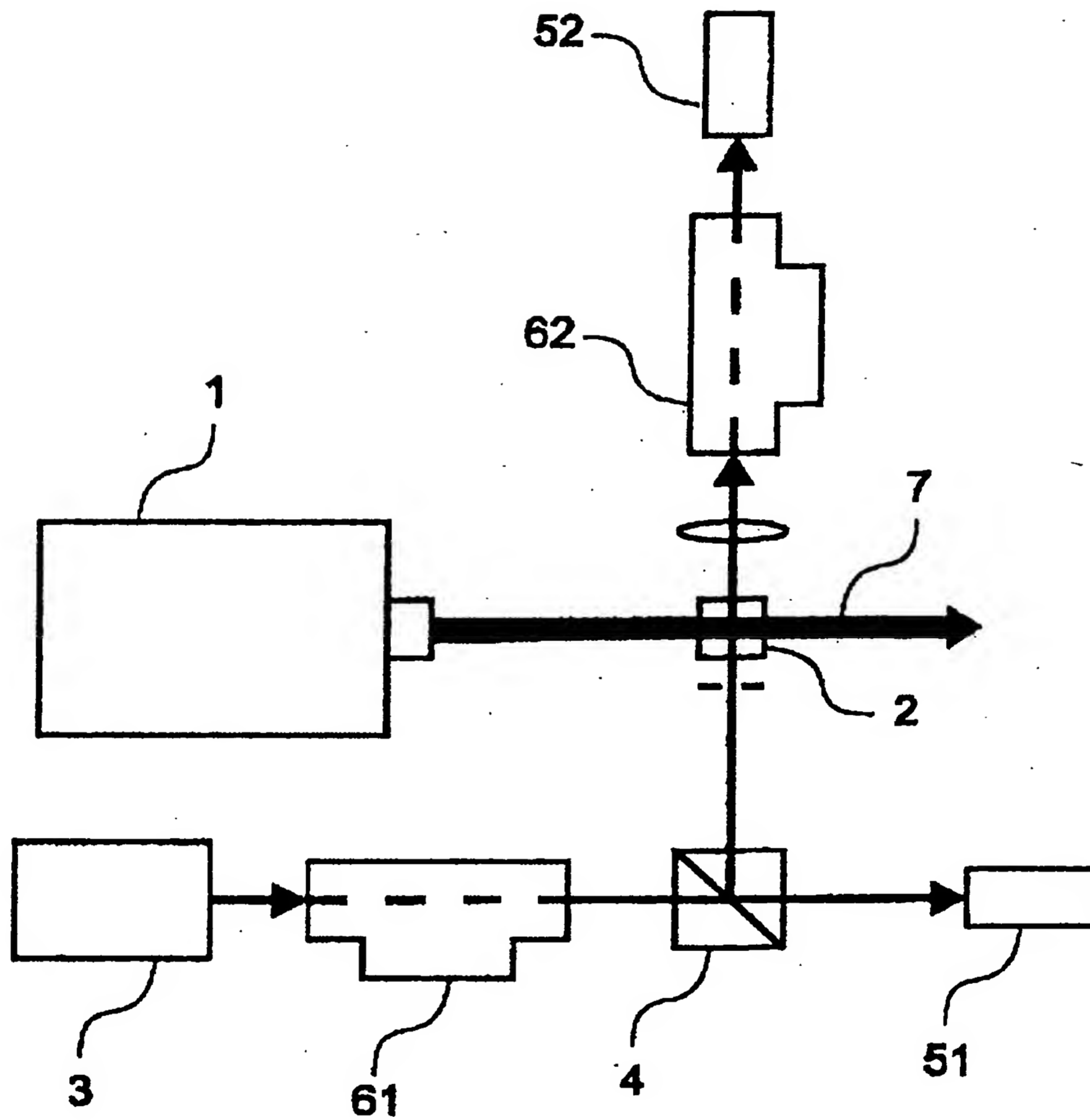


Fig. 3

Results on the Evaluation of Physical Properties obtained in Examples and Comparative Examples

	Example 1	Example 2	Example 3	Example 4	Example 5	Comp. Example 1	Comp. Example 2
Average Hydrogen Concentration	$4.5 \times 10^{18}$	$1.7 \times 10^{18}$	$1.6 \times 10^{19}$	$4.0 \times 10^{18}$	$3.0 \times 10^{18}$	$7.5 \times 10^{18}$	$4.0 \times 10^{18}$
$\Delta$ Hydrogen concentration	$5.0 \times 10^{17}$	$3.5 \times 10^{17}$	$1.2 \times 10^{18}$	$4.0 \times 10^{17}$	$3.0 \times 10^{17}$	$1.1 \times 10^{17}$	$4.5 \times 10^{17}$
Homogeneity (direction of diameter)	$\pm 0.9 \times 10^{-6}$	$\pm 0.9 \times 10^{-6}$	$\pm 1.5 \times 10^{-6}$	$\pm 1.0 \times 10^{-6}$	$\pm 0.9 \times 10^{-6}$	$\pm 2.5 \times 10^{-6}$	$\pm 1.0 \times 10^{-6}$
Homogeneity (thickness direction)	$\pm 1.5 \times 10^{-6}$	$\pm 1.2 \times 10^{-6}$	$\pm 1.8 \times 10^{-6}$	$\pm 1.5 \times 10^{-6}$	$\pm 1.2 \times 10^{-6}$	$\pm 1.8 \times 10^{-6}$	$\pm 1.5 \times 10^{-6}$
ArF RDP	0.0015	0.0020	0.0023	0.0015	0.0012	0.0030	0.0130
KrF RDP	0.0035	0.0045	0.0050	0.0035	0.0032	0.0070	0.0310
Stress	< 1.5 nm/cm	< 1.5 nm/cm	< 2 nm/cm	< 1.5 nm/cm	< 2 nm/cm	< 3 nm/cm	< 1.5 nm/cm
Size (diameter)	240	240	240	240	240	240	240
Size (thickness)	40	45	25	40	50	40	40
Hydrogen treatment method	two-step pressure	two-step pressure	three-step pressure	two-step pressure	three-step pressure	constant pressure	two-step pressure
Type of quartz glass	Soot material	DQ material	DQ material	Soot material	Soot material	Soot material	Soot material
Hydrogen treatment temperature	350 °C	400 °C	350 °C	350 °C	350 °C	400 °C	650 °C
First condition							
Pressure (atm)	30	10	100	30	30	30	30
Time (hours)	600	350	120	600	550	600	130
Second condition							
Pressure (atm)	8	2.5	50	8(H <sub>2</sub> )/ 22(H <sub>3</sub> )	4		8
Time (hours)	550	300	85	550	500		120
Third condition							
Pressure (atm)	-	-	25	-	10		
Time (hours)	-	-	135	-	120		

Fig. 4

